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TRANSCRIPT OF PROCEEDINGS

PUBLIC MEETING

**PROPOSED GROUND WATER REMEDIATION
NAVAL INDUSTRIAL RESERVE ORDINANCE PLANT
FRIDLEY, MINNESOTA**

MAY 9, 1990

6:30 p.m.

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Presentation by Commander HoganP. 3

Questions and/or CommentsPP. 16, 20,
22, 23,
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Closing Comments by Commander HoganP. 73

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PRESENTATION PANEL:

COMMANDER DANIEL T. HOGAN

Commanding Officer
Naval Industrial Reserve
Ordinance Plant

MR. JAMES SHAFER

Project Manager
Naval Facilities Engineering
Command

MR. JOHN JAPP

Project Manager
Corps of Engineers
Omaha District

MR. MARK LAHTINEN

Project Manager
Minnesota Pollution Control Agency

MR. THOMAS BLOOM

Project Manager
U. S. Environmental Protection
Agency

MR. ERIC GREDELL

Project Manager
RMT, Inc.

* * *

WHEREUPON, the following proceedings were had: --

* * *

1 COMMANDER HOGAN: My name is Dan
2 Hogan. I'm the Commanding Officer of the Naval
3 Plant Representative Office here in Fridley. We're
4 located at the Navy Industrial Reserve Ordinance
5 Plant, otherwise maybe known as FMC Corporation's
6 location over on East River Road.

7 It's my intention this evening to
8 present to you a Department of the Navy briefing
9 with regard to a remedial action or a cleanup
10 activity ongoing at the Navy Industrial Reserve
11 Ordinance Plant or the NIROP.

12 I've got a whole series of acronies
13 that I will probably go through tonight, all
14 those fancy terms and things. I will try to define
15 those to make sure that you understand them as
16 we go through it.

17 The project or the meeting this
18 evening is really to present to you, representing
19 the public, the overall project in response to
20 an environmental cleanup activity at the NIROP
21 itself. We would like you to fully understand
22 what it is that we're doing over there and what
23 the intent of the activity itself is and ask you
24 to comment accordingly, you as an individual or
25 you representing any individual activity and would

1 ask that you, to feel free to do that.

2 We're going to be talking about
3 ground water remediation. We're going to be
4 talking about taking care of a contaminant in
5 ground water beneath that particular site. We'll
6 talk about that itself.

7 The Navy is the lead DOD service
8 activity responsible for that particular project
9 and that's why you see the Seal behind me.
10 Representing the Navy is myself as the Commanding
11 Officer of that particular activity and I'm the
12 individual on site responsible for that particular
13 portion of it. The cleanup activity itself will
14 be handled by the Environmental Division of the
15 Naval Facilities Engineering Command, the Northern
16 Division Office, whose office is located in
17 Philadelphia. They are responsible for all of the
18 activity with regard to Navy facilities in the
19 Northern States, essentially from Maine through
20 Minnesota and into South Dakota in some other
21 cases.

22 I introduced myself as the CO of
23 the NAVPRO. That's just the title of the command
24 that's physically reserved in the NAVPRO itself.
25 I will probably not refer to that any later on.

1 While the NIROP is owned by the Navy, it is
2 operated under a Lease Agreement by FMC Corporation.
3 FMC is, obviously, the contractor on site.

4 We're going to be talking about the
5 Navy portion of the Plant this evening and the
6 activities ongoing in the Navy portion of the
7 Plant, which are leased and operated by FMC
8 Corporation.

9 As we go through this evening, we
10 will, in fact, introduce the gentlemen on my right
11 to you, as well as proceed down with the Agenda
12 that's so listed here below that. But, let me
13 first introduce the players on my right.

14 Mr. Jim Shafer is the Project Manager
15 out of the Naval Facilities Engineering Command,
16 Northern Division, in Philadelphia. He'll be
17 here to answer any questions from that activity.

18 On his right is Mr. John Japp, who is
19 responsible for the physical work that's going
20 to be happening out here. He represents the
21 Corps of Engineers located in Omaha. Mr. Shafer
22 has contracted with the Corps of Engineers for
23 that particular cleanup activity here.

24 On his right is Mr. Eric Gredell, who
25 is under contract to the Corps of Engineers and is

1 also the lead activity on the contractor's side
2 doing the work on site and helping us prepare
3 the plans and the design specifications and the
4 actions supporting us in that particular effort.

5 On his right is Mr. Mark Lahtinen.
6 Mark represents the Minnesota Pollution Control
7 Agency, which is the State's Regulatory Agency, who
8 is overseeing the whole activity from the State
9 of Minnesota's perspective.

10 On his right is Mr. Tom Bloom, who
11 represents the USEPA, Region V out of Chicago,
12 and he represents the oversight of Federal
13 Oversight Regulatory Agency.

14 And, as you can see, I think we cover
15 all the particular bases here. You, as represent-
16 atives of the City and the Town and the County,
17 are all part players in here also. These
18 gentlemen are responsible for presenting the
19 program to you and carrying out the particular
20 plan. They are also going to represent their
21 individual activities in the process of determining
22 which direction we take.

23 I anticipate taking about 30 minutes
24 of your time to go through the presentation
25 itself. We'll talk specifically about some of

1 the history and the background; we'll talk about
2 the process; we'll talk about the location; we'll
3 talk about the actual plan that we, in fact, have
4 ongoing at the facility and ask you to comment
5 accordingly, if you so desire. If you have
6 questions or comments germane to the overall
7 presentation, I would ask you to hold them to the
8 end. If, however, there is a point as I present
9 my presentation to you this evening that's not
10 clear, please so indicate that and I'll try to
11 take care of that right away. But if you have a
12 comment or a lengthy question that's going to involve
13 some discussion possibly, I'd ask that you hold
14 that to the end. So, following the presentation,
15 we'll break for just a few minutes, and then we'll
16 come back and address those particular questions
17 as a whole.

18 Let's begin a little bit about this
19 evening itself. As I present this particular
20 slide, let's talk about what we're going to do this
21 evening. When we go through the 30 minutes
22 themselves, we're going to present a whole series
23 of ongoing events of things that have already
24 occurred and they are currently on file in two
25 locations. The record of elements that have

1 already transpired, and for reference purposes,
2 we are going to be talking about this activity
3 this evening. We're midway through a process.
4 As you see, there's a lot of words up there. That
5 which has occurred prior to this time is on file
6 at the Anoka County Library and at the Minnesota
7 Pollution Control Agency and in the offices of
8 the gentlemen that you see up here. In addition
9 to that, a lot of that information is contained
10 in a Fact Sheet, which you have access to that
11 were surely on the registration table from there.
12 It explains a brief history of the events also.

13 The plan we are talking about is
14 contained in this particular document here, which
15 is available on the registration desk or also is
16 available on request. The preceding documents,
17 as I had indicated, are on file at a couple of other
18 locations in town. We ask that this evening
19 if you have questions to bring them up and we
20 will record them. We'll take those particular
21 questions and/or comments. You also have the
22 opportunity to submit any written comments that
23 you might have up through and including the
24 30th of May. As long as they're postmarked by
25 that particular date, they will be officially

1 entered into the record and they will be duly
2 responded to and will be part of the official
3 record that goes on file, and your comments will
4 be included as elements in the decision-making
5 process regarding the alternative chosen in
6 regard to the cleanup activity on site.

7 Transcripts of tonight's proceedings
8 are available and they certainly will be able to
9 be gotten by writing Mr. Jim Shafer here at the
10 address listed in the Fact Sheet itself for anyone,
11 and as I indicated, they will be a matter of the
12 public record themselves.

13 Now, as we have had a chance to look
14 at that particular slide behind me, we have
15 proceeded through a preremedial phase; really, it
16 goes way back to the time of 1981. In 1981 on site,
17 and I will show you the site and the layout in
18 just a few minutes, was discovered a storage area,
19 underground storage basically, following the
20 2nd World War and through the 20-or-so years
21 following that, it was the normal practice to
22 bury things on site. We uncovered 43 barrels
23 of solvents, chemicals, cleaners, buried there,
24 some of which had been leaking at a particular
25 time. Those 43 barrels had been removed, as well as

1 1200 cubic yards of earth that was surrounding them
2 at the time, that was removed and buried off site
3 in an EPA-approved landfill, and in turn, that
4 ground was cleaned up and those holes were filled
5 back in.

6 But the question was asked at that
7 point in time, what else has occurred? So, as we
8 had proceeded through that particular time
9 frame, we really began the preremedial process.

10 We had looked into a whole series
11 of elements at that time to try to determine
12 what had been in the ground. The principal
13 contaminant that we are referring to is
14 Trichloroethylene or TCE. It sounds like a big
15 word, but in reality is a very, at that time,
16 widely used chemical solvent for degreasing parts.
17 It was also one of the prime drycleaning fluids
18 at that particular time and it was quite in common
19 use. It was often used alternately as an
20 anesthetic in hospitals in different kinds of
21 concentrations, so it was not something that was
22 unusual at the particular time.

23 So, what we're talking about is not
24 something that has been, oh, it's not nuclear
25 waste by any means. It's not something that is

1 very, very involved.

2 I must also indicate that as that was
3 identified and we looked to see what particular
4 aspects were involved, we already began the process
5 of the investigation and we were already looking
6 at assessments of what risks were out there. What
7 were we imposing, what was the problem, how
8 did it come about? Those are all documented, as
9 I had so indicated.

10 The particular contaminant that was
11 of concern, TCE, was discontinued entirely at the
12 facility on the plant in 1987. So, it took a
13 few years to make sure that all of that which was
14 used as a common practice was removed from that
15 particular plant and off the site, as well as the
16 barrels and other investigations were had concern-
17 ing them.

18 At that particular time, once the
19 initial investigations were under way and it
20 became known to both the Navy, the State and the
21 Federal, the EPA, we became involved in what was
22 the pre-processes to be placed upon a National
23 Priorities List for cleanup. And I'm sure that
24 you all are aware of the involvement with the
25 Superfund activities in the latter portion of the

1 Reagan era.

2 In 1989, February, 1989, after having
3 already been identified as an activity, we had a
4 particular cleanup activity ongoing, we got the
5 additional oversight officially by being placed
6 on the National Priorities List and the cleanup
7 activities got another boost from that side.
8 And I must say that that was, in fact, a boost
9 also as we go through it.

10 In determining what was on site at
11 the time during this process and prior to the
12 selection of a remedy, we had already known that
13 we had a particular problem. We sunk 53 water
14 wells at that particular time in and around the
15 site to attempt to determine what was, in fact,
16 in the ground and to what extent had any of those
17 barrels leaked or the activity progressed through
18 the soils themselves. At that particular point
19 in time, those wells are currently in place and
20 they are currently being monitored, so it was
21 an extensive field placed in the ground to help
22 to determine what the heck was there.

23 Those immediate investigation and
24 feasibility studies were completed in 1988.
25 Following placement on the National Priorities

1 List, we took that material which was already in
2 place and we have used that now to even accelerate
3 the process of the cleanup itself. We're at
4 this particular point in time where we have
5 proposed a plan for the cleanup. Having had all
6 the activities involved, we have proceeded under
7 a new set of Guidelines and new particular laws
8 where we have been working with the EPA, the
9 MPCA, and other state agencies, the Minnesota
10 Water Commission and the County of Anoka, City
11 of Fridley and a whole series of other people
12 that have been involved with us right now.

13 The remedial action alternatives
14 that we are going to talk about concern the ground
15 water as it passes through and beneath the plant.
16 We'll talk about that in just a minute.

17 We have been meeting regularly with
18 all of the people involved in a series of TRC's or
19 Technical Review Committees since February of
20 1989. This has been ongoing for quite some time
21 in the process.

22 We are proceeding along with the public
23 comment portion of that right now and we'll be
24 looking for comments that will lead to a record
25 of decision which ultimately would be an agreement

1 on the plan itself.

2 So without any further adieu, let's
3 begin to talk about some of the more germane
4 aspects.

5 We're talking about the NIROP
6 Facility as you see it up here (indicating). North
7 is to the top and east/west around from there.
8 The Mississippi River flows from north to south
9 on the left-hand side of the screen; Anoka County
10 Park just inboard of that; and the NIROP Facility
11 is this portion of the north site. FMC Company
12 owns the land to the south and they are co-meshed
13 and mingled in a building that overlaps the
14 boundary line. So, anything to the south of this
15 line, although this common roof line belongs to
16 FMC, anything to the north of that belongs to
17 the Navy and is rented by FMC.

18 The area that I had referred to
19 earlier where the barrels had been found is
20 in this area to the north, what we will refer to
21 as the North 40. That's about a 40-acre site
22 to the north of the Plant. I have some other
23 aerial pictures of that that we can see here.

24 In this particular picture, you are
25 looking from south to north, much the same as

1 that particular presentation. We're talking
2 about the area just at the end of this building
3 right here (indicating). The main area where that
4 was first found is to the north. And again, the
5 river being here flowing this way (indicating)
6 and the road, and the other element that I did
7 not point out to you was the Burlington Northern
8 Railroad tracks to the east of the Plant itself.

9 Somewhat easier to see but from a
10 different direction looking west to east was
11 shown as the proximity of the river and the park
12 as it was being developed early on. If you're
13 looking from west to east, the area of the
14 source contaminant as we had initially projected it
15 was right here (indicating) and we will be talking
16 about that in the park area to the west of that
17 at this particular time.

18 What we're going to be talking about
19 is, in fact, the remedial actions ongoing on the
20 Navy portion of that site. And as we go through
21 that, please keep in mind that the properties
22 are divided, but that they are in co-use. One
23 of the things I want to point out to you at this
24 particular point in time is that the normal flow
25 of the ground water beneath that particular plant

1 all throughout this area is from the northeast
2 to southwest.

3 Yes, sir?

4 UNKNOWN SPEAKER: May I ask a question
5 at this point?

6 COMMANDER HOGAN: Yes.

7 UNKNOWN SPEAKER: I've never known
8 where the ground water comes from in this area;
9 does anybody know if this comes from Lake Superior
10 directly, is this an underground stream, what
11 aquifer is it from?

12 COMMANDER HOGAN: We have two things.
13 I hope to identify that particular a little bit
14 later on.

15 UNKNOWN SPEAKER: Okay. Fine.

16 COMMANDER HOGAN: If I don't answer
17 your question specifically, we've actually got
18 two.

19 UNKNOWN SPEAKER: Okay.

20 COMMANDER HOGAN: I'll try to relate
21 that two or three slides down, if you can just
22 wait just a few minutes.

23 UNKNOWN SPEAKER: Okay. I'm sorry.
24 I was impatient.

25 COMMANDER HOGAN: As I had talked

1 about or had begun to get into, the ground water
2 flows from the northeast through to the southwest
3 beneath the plant. And, in general, the flow
4 of that particular water is here (indicating).
5 As we had indicated earlier, the location of the
6 former storage site or dump site was to the north
7 end of the plant. As it would leach through and
8 proceed down and into the ground water, we had a
9 flow that was pretty normal at that particular
10 point in time.

11 What concerns did we have at that
12 particular site? I think that's probably really
13 what we had. What were we looking for as it was
14 being presented? Was this a health hazard?
15 Did we have a concern about it? What was it going
16 to do? Where did this water go? Who was going
17 to be involved? What were the particular concerns?

18 The environmental risks were one and
19 certainly public health risks were of priority
20 in that particular involvement.

21 Locations became important. And I
22 think most of you are aware of that because just
23 to the south is the main intake for the Minneapolis
24 Water Plant. It's about a mile south of this
25 location here (indicating). So, anything that was

1 a contaminant had the potential of entering the
2 river and ultimately entering the water supply
3 of the city.

4 To try to attempt to answer your
5 particular question initially, the TCE that was
6 found in the ground was one of several contaminants,
7 all being in and around and used as solvents
8 and/or paint thinners which were a common industrial
9 practice solvents of that time. As they, and
10 let me so indicate here, that on this scale, we're
11 talking about height and feet above sea level
12 with the ground level being about 825, 830 feet;
13 and this being about 700. So, we're talking about
14 100 to 140 feet beneath the ground. This is
15 representative of the land area upon which the
16 plant exists. This being a cross-section. The
17 park here and the river off to the left of that.

18 We have beneath the ground a sandy till
19 area, sandy, and a principal element of un-
20 consolidated elements under there. In other
21 words, just a hodgepodge.

22 Till is a consolidated layer of clay
23 and soil that tend to be compacted. I think
24 anybody who has dug in their garden has a pretty
25 good idea of what I'm talking about in terms of

1 that.

2 For about the first 100 to 120 feet,
3 you have this very soft porous element with major
4 blockages in between. The upper ground water,
5 which tends to be derived from the surface much to
6 the northeast, flows from that corridor through
7 this filtered element. Below that is a sandstone
8 element, almost a capped area, and below that is
9 the Prairie du Chien and Jordon aquifer itself.
10 That's the one that is the deep aquifer that's
11 been referred to or seen. We're actually talking
12 about separated ground water layers involved
13 separated by a hardened sandstone cap. This is
14 the upper layer that we're talking about. It derives
15 itself from the surface water elements around
16 this particular area in a collection. So, you're
17 not going to see this become lake type activity
18 up here.

19 The primary source of Prairie du
20 Chien, I would have to defer to you, sir, and
21 say that, again, is a consolidation of a whole
22 series of things. But we have two distinct
23 layers here.

24 And as is so indicated by this typical
25 representation, what we're talking about is the

1 ground water table goes down and begins about
2 20 feet below the surface itself. And it's there
3 that the underground mixing would occur because
4 of the flow from northeast or in this case from
5 right to left and brought across and conceivably
6 through a percolation or a lifting effect by the
7 river being mixed with the river itself. We're
8 talking about an area which, in the process of its
9 normal environment, has been ongoing for years in
10 that particular flow. We're not converting
11 anything.

12 UNKNOWN SPEAKER: I don't mean to
13 ask another question, but since TCE is heavier
14 than water, it would not go to the top; wouldn't
15 it go down into the ground water? Why would it
16 go into the Mississippi River necessarily? Has it
17 been found in the Mississippi River at that point?

18 COMMANDER HOGAN: Not in high con-
19 centrations, sir, none whatsoever at that particular
20 point. What you tend to see, though, is that
21 the chemical itself would go in with the normal
22 flow of water and would just make its own source.

23 UNKNOWN SPEAKER: I see.

24 COMMANDER HOGAN: -- and could progress
25 there. There is a natural filtering and dilution

1 effect that's ongoing in this particular process.
2 However, as anything, in the near vicinity,
3 you would see a concentration and a normal dilution.
4 We're concerned about that as we have proceeded
5 through.

6 This ground water, as is so indicated
7 up there, a portion of it is certainly discharged
8 into the river. And the effect of that is one
9 similar to a siphoning effect as it goes through.
10 It is not, however, dumped in quantity, it is
11 not, however, flowing across anything that looks
12 like a dam.

13 We do, however, pass through out of
14 the land mass beneath the Industrial Ordinance
15 Plant and across East River Road and in and
16 through the park. At one time, this was a con-
17 solidated piece of property. Now, it is actually
18 broken up where we have three elements with the
19 road bed in between.

20 Constituents, certainly, of that
21 particular ground water have been certainly going
22 through to that particular river for some time
23 in the normal course of events. The TCE has been
24 monitored at the Minneapolis Water Intake Plant
25 for three years now and it has not been found in

1 concentrations even to the point of being close
2 to measurable. Within the process of the
3 dilution and filtering in the ground, the dilution
4 effect by the river is to the point where we've
5 never seen any concentrations in there, despite
6 the fact that we have, in fact, been measuring
7 TCE in the ground itself with the water wells
8 beneath the plant.

9 UNKNOWN SPEAKER: That would be a
10 consideration for Fridley residents who pump the
11 water for their usage, the ground water from the
12 City Well No. 13.

13 COMMANDER HOGAN: That's correct, sir.

14 Let me point out for the rest of you,
15 that the Well that the gentleman has pointed out
16 is located to the north of the Plant here (indicating),
17 the northwest corner of the property itself and
18 is the general flow pattern downstream. However,
19 inprecise that may be measured, it is certainly
20 in near proximity to that.

21 Elements that have been measured
22 there, however, have not been at any levels where
23 human risk would be a concern.

24 The subject TCE, though, is something
25 of particular concern because it has that particular

1 aspect where if you take in quantity, large
2 quantities over a very long period of time, it has
3 the possible effect of producing, it's a carcinogen.
4 You run the risk, an increased risk of cancer.

5 The kind of thing we're talking about
6 is drinking two liters of this water in concen-
7 tration per day for about 70 years and it would
8 increase your risk of developing cancer by 1 in 10,000
9 to 1 in a million additional chances.

10 Yes, sir?

11 UNKNOWN SPEAKER: May I ask another
12 question? You mentioned that there
13 were other chemicals found besides TCE; what
14 are the other chemicals which are found in there
15 besides TCE in relation to the toxicity of those
16 chemicals to TCE?

17 COMMANDER HOGAN: They are all
18 considerably less. I can read the chemical names
19 to you if you would like.

20 UNKNOWN SPEAKER: Okay.

21 COMMANDER HOGAN: They found in
22 addition to TCE, 1,1,1-trichloroethane; 1,2-
23 dichloroethylene, tetrachloroethylene; 1,1-
24 dichloroethane; toluene; xylenes and ethylbenzene.
25 All these are additional chemical compounds related

1 to solvents and/or paint stripper-type materials.

2 Yes, sir?

3 UNKNOWN SPEAKER: Well, toluene, xylene
4 and some of the others are flammable; therefore,
5 if they were in high concentrations, there could
6 be the fire potential if they were concentrated
7 in an area. Toluene is part of gasoline.

8 COMMANDER HOGAN: Those chemicals
9 have all been found in trace elements in that
10 particular samples taken and, in fact, have not
11 been found to be in quantities any greater than
12 the TCE. The TCE is the principal element that
13 has been found in all of the sampling to date.

14 As I so indicated to you, the ground
15 water flow area itself, the chemical constituents
16 itself and the general flow pattern has the effect
17 that we have a source activity upgradient. That
18 flow is being passed downgradient and has the
19 potential of mixing and being a potential problem
20 in the future.

21 Currently, there is no measurement of
22 a problem to humans in that particular area at all.

23 Let's talk about some of the things
24 that we intended to do this evening. While I have
25 no drinking water wells from the site used on the

1 Navy property or on FMC's property and currently
2 there are no wells with the exception of 13, which
3 is in the near vicinity of that particular field
4 used by anyone for drinking water purposes, I
5 have monitor wells in that particular area. I
6 am concerned about what is going to take place
7 in the future. What about potential future use
8 of that underground element? Since we are
9 adjacent to the waterworks itself, the main
10 intake plant, the possibility certainly exists
11 that they might want to put additional wells nearby.
12 I think we need to identify what's there and
13 make sure that we are clearing up what might be
14 the possible problem beneath the plant before
15 it gets out and actually does cause a problem
16 for anyone else.

17 Some of the alternatives that have
18 been going through and some of which we will
19 talk in detail tonight, certainly had the possibility
20 of doing nothing, very likable alternatives, one
21 that certainly is there.

22 We could have done a couple of things.
23 We could have capped the site itself such that
24 any particular rain water or snow melt that would
25 have come through the ground that would have

1 forced the contaminants that were already there
2 in a stratified level to go even further down and
3 mix is somewhat of an umbrella approach to things.

4 We could have excavated, treated
5 and disposed of the contaminated soil elsewhere.
6 At that particular point, one would have to
7 determine a very large crater out there. We
8 could have excavated that soil, treated it, disposed
9 of it after cleaning it up in its same hole, having
10 sort of halted that particular activity.

11 A rather high tech element would have
12 been to in-place treat that particular soil itself
13 using a vacuum extraction technique. In essence, you
14 would lower the pressure gradient from the surface
15 and break the molecular attractants of the
16 chemicals as they were in that particular ground
17 condition and attempt to vaporize and remove
18 them from that particular soil.

19 We could have pumped and disposed
20 of the ground water itself, just take it out of
21 the ground and, in fact, run it through a sewer
22 system.

23 Element F here, we could have pumped,
24 treated and disposed of that particular ground
25 water. We could have proposed that ground water

1 be treated at the proposed site, the Minneapolis
2 well field, should the Minneapolis Waterworks
3 decide to sink a well field elsewhere. In essence,
4 do it later on. And we could have, in fact, if
5 there were elements out there, if Minneapolis was,
6 in fact, looking to sink any well fields, forced
7 them to move it elsewhere because we weren't
8 willing to do anything else at all.

9 Those particular alternatives were
10 some of those that were considered. They were all
11 evaluated using the following particular criteria.
12 If you look at this, most of those were technically
13 feasible. Prime Category. What were the
14 environmental effects or potential environmental
15 effects by conducting any one of those particular
16 activities? Certainly of concern were institutional
17 requirements, the State and Federal Regulatory
18 requirements that had to be met. The prime
19 concern to everyone involved in it was the public
20 health effects. And part of the ongoing earlier
21 process had been a public health assessment and
22 that was an ongoing public health assessment as
23 we went through the particular process of
24 identifying what was in the ground.

25 And lastly, cost comparisons. As it

1 turns out, I would like to point out to you, right
2 at the top, that the Navy's public health concern
3 was primary. The environmental effects secondary,
4 second only to the public health institutional
5 requirements which were many were met. The
6 technical elements and cost elements were all
7 thrown in following those.

8 The plan that is going to be presented
9 to you quite shortly surrounds Element F, which
10 includes pumping, treating and disposing of the
11 ground water in the vicinity of that particular
12 site and it's that which we are going to talk
13 about now. It is the water, the ground water
14 remediation activity that's ongoing.

15 What we plan to do is install five
16 wells located in these locations on and adjacent
17 to the Navy property within the confines of the
18 combined element property that exists that is
19 operated by the Navy and FMC Corporation. It is
20 in the area of the plume, as I had so indicated
21 to you before, and immediately in and adjacent to
22 the area of the ground water flow. So, with the flow
23 being from here, we're attemptint to intercept
24 that particular flow at the boundary and in near
25 the source of the element, the contaminants itself.

1 Those five wells would be sunk. The
2 water would be extracted from those particular
3 wells for a period of time, all properly permitted
4 and controlled. That water would be brought out
5 of the ground, checked and exhausted or dumped
6 into the sanitary sewer system, which in turn
7 would be routed down and treated at the Waste Water
8 Treatment Facility at Pig's Eye, south of St.
9 Paul, and that would be a self-contained or a
10 contained element itself that would mix with all
11 the other elements within the sewer system and that.

12 Until such time as a treatment
13 facility on site, after further investigation
14 of the water that's extracted from these wells is
15 determined, we would propose to build an on-site
16 ground water treatment facility and take like
17 all five of these particular wells through a
18 manifold, route them to be treated at an on-site
19 facility and then the clean water would be
20 exhausted into the Mississippi River. Until
21 such time as that particular treatment plant would
22 be put in place, we would not take any of the
23 contaminants out of the ground and dump them
24 without being treated into the Mississippi
25 River itself.

1 That, if approved and recorded
2 appropriately, would be the particular plan. We
3 would begin this particular process at the end
4 of the summer of this year. We would begin to
5 sink those particular wells and extract that
6 water in the late December or early January
7 time frame.

8 All the ground water that would be
9 taken out and treated, it would be ultimately
10 returned to the river, and would meet all State
11 and Federal Standards for extraction and disposal
12 in terms of permits. If it was returned to the
13 river after its treated condition, it would meet
14 what would be the apropos State and Local Guidelines
15 at that particular time.

16 The wells themselves, as would so
17 indicate, would be sunk into the area above the
18 capped Prairie du Chien aquifer. It would be in
19 the ground water area themselves. They would be
20 located along the property lines just east of
21 the road and would be sunk at different levels
22 depending upon where the concentrations were the
23 highest and water would be extracted from them,
24 brought up to the top, treated and then disposed of,
25 and as I so indicated initially, into the sewer

1 system in the long term through an on-site treatment
2 plant.

3 The attempt to place them in the
4 property line does a couple of things. It assumes
5 the responsibility and attempts to contain those
6 particular contaminants within the boundaries
7 that we are aware of and know of and are responsible
8 for. It also allows us to draw back from the
9 downstream and even some upstream areas and
10 concentrate that prior to exiting into a common
11 use area that would be downstream of us. So,
12 there is the possibility of being able to bring
13 back with sufficient pumping action waters that
14 were outside of that particular boundary and con-
15 taining all of that particular element, contaminant
16 elements prior to reaching out.

17 That particular treatment system
18 would be monitored continuously, as well as the
19 other 53 wells that are on site, we would add
20 to them and a continuous monitoring effort would
21 be placed to ensure that we understand what's
22 ongoing in the ground beneath that. Because the
23 other well sites are located down and through into
24 the same area, but located at different regions
25 around that property site, we would have a very

1 good sampling of the activity in terms of the
2 cleanup itself. And over a period of time, we
3 would expect to see the improvements in that
4 particular site.

5 We would also know whether the source
6 that we suspect was ours is, in fact, the only
7 source that may be involved in this particular
8 process. Should there be others, we would have
9 a possibility of working with those individuals
10 to help even further cleanup of that particular
11 problem.

12 Estimates of cost are so indicated
13 in here. We're anticipating spending about
14 3.7 million dollars for this pumping activity and
15 operating that particular activity for approxi-
16 mately 30 years in time. The cost estimates
17 are drawn out for that particular period of time.
18 So, what we're talking about is sinking wells
19 now and pumping out and monitoring that activity
20 for quite a long period of time.

21 The building of a treatment facility
22 would be involved. What kind of a treatment
23 facility? Well, we're talking about if the
24 ground water that we are extracting still shows
25 chemicals in concentration, we would attempt to

1 extract those and filter them on the surface
2 using a series of techniques, evacuating some
3 of that particular material to the air after
4 it passes through our department filters and
5 then taking the ground water that was extracted
6 from that through other filters and returning it
7 clean to the environment itself, back to the
8 river.

9 We could, in fact, take that out and
10 send it through other forms of treatment, but
11 that appears to be the most straight forward.

12 UNKNOWN SPEAKER: I was just
13 wondering, at the time of a flood, what would the
14 results of that process be? Could you shut
15 that pumping system off so you wouldn't add more
16 water into the Mississippi River at the time of
17 a flood condition? I mean, like we've had
18 floods here several times, '65, '69?

19 COMMANDER HOGAN: Yes, sir. That
20 could be done. This would always be controlled.
21 I think what we would certainly do is make sure
22 that this does not operate free-flow. We're
23 talking about wells themselves operating, these
24 two in particular, at a rate of about 50 gallons
25 per minute. That's probably not going to

1 deplete the ground a whole lot.

2 The other three, one operated at
3 150 gallons per minute and the other two at 200.
4 So, we're talking about 650 gallons per minute
5 to be extracted from the ground. Not an
6 inordinate amount of water, but certainly not
7 one that would cause us a particular problem in
8 that area.

9 The monitoring activity and samples.

10 Yes, sir?

11 UNKNOWN SPEAKER: Just a quick question.
12 You mentioned about the GAC, are you going to
13 pack cover chlorination? You said through another
14 process, or is it just carbon filters? (Sic)

15 COMMANDER HOGAN: Well, let me go
16 back through those.

17 Let me defer -- just a second.

18 Eric, could you help me on these
19 other three alternatives.

20 MR. GREDELL: Sure. Just briefly.

21 Some of the alternatives that we are
22 still evaluating and they are part of that
23 Feasibility Study Report that the Commander
24 mentioned in his opening remarks. It's laid out
25 in there, the different technical treatment

1 alternatives we are still considering. One of
2 those alternatives would be air stripping as the
3 primary treatment or step, probably a two-stage
4 air strip, where we would also have carbon columns
5 for the exhaust air off of those air stripping
6 columns. That is where you remove the TCE
7 and the other volatile compounds from the ground
8 water and put it into the air phase and then you
9 remove those compounds again from the air phase into
10 the carbon, which is then taken off site and
11 disposed of in a proper manner.

12 We would also be looking at the
13 quality we get of the ground water then as it
14 comes out of those air stripping columns and
15 depending on the standards, the treatment or
16 discharge standards that the State would apply, we
17 may also have to look at additional treatment
18 for that water coming out of the air stripping.

19 Those are, you know, process design
20 considerations that are still being evaluated.
21 But the overall intent is to treat the ground
22 water through the most efficient, economical
23 way, you know, that you can to meet the required
24 discharge standards and meet air quality standards
25 also, which the State would regulate.

1 UNKNOWN SPEAKER: I have a question
2 of that particular approach. Using a distillation
3 process and a condensing process, you could get
4 the liquid TCE back. And as I recall, TCE
5 is a stabilized rent(sic) corrosion. You could
6 use the TCE over again and rather than dumping
7 the carbon elsewhere and finding a disposal
8 system, you'd put the TCE back into the screen
9 which generated TCE.

10 MR. GREDELL: Would you like me
11 to respond to that?

12 COMMANDER HOGAN: Sure. Go ahead.

13 MR. GREDELL: I think your question
14 is directed at the ultimate fate or the disposal
15 of the contaminants, I think, as I understand it.
16 I didn't follow through on explaining what happens
17 to that carbon after it's taken off-site.

18 Generally, for the size of treatment
19 systems that we're talking about, the carbon usage
20 would be significant enough. The Navy would be
21 purchasing the carbon from a carbon supplier,
22 a manufacturer, and part of their service that
23 they would be providing under contract would be to
24 bring fresh carbon to the site to replenish the
25 carbon contacters, taking the spent carbon, the

1 carbon saturated with the organic compounds
2 off site.

3 Typically, that carbon is taken to a
4 central, you know, licensed facility that these
5 manufacturers operate and it's regenerated. It is
6 usually incinerated and at very high temperatures,
7 and in that process, those volatile organic
8 compounds are physically destroyed. They're
9 chemically, they're changed, their state changes.
10 They're just physically destroyed. There's not
11 really the opportunity that they could be
12 introduced back into the environment.

13 UNKNOWN SPEAKER: Well, what about
14 the chlorine that's released in the destruction
15 process? The chlorine is part of the materials
16 which are used or blamed on producing ozone
17 depletion. Therefore, you wouldn't want to
18 decompose chlorine materials or release them back
19 into the air. As I say, if you use the process
20 where you distill it, I mean condense it after
21 you heat the material, then you recombine that
22 original material in a liquid form and then you
23 can work with it there rather than boiling it
24 or burning it somewhere else, because you're
25 putting chlorine back into the air with TCE, because

1 it's got three chlorines per molecule. And it
2 also decomposes the form hydrochloric acid on
3 burning. And if there's a possibility, that's
4 what we used at 3M, we had to measure phosphine gas,
5 which is a War gas used in World War I, it's a nerve
6 gas.

7 COMMANDER HOGAN: Okay. I think what
8 we'll do is take your comment, sir. We have
9 not included that in our options at the treatment
10 side of it as far as disposal. We'll certainly
11 have to take that into consideration. I don't
12 believe we answered all your other questions.

13 UNKNOWN SPEAKER: Fine. I think
14 you did, you said you haven't really decided.

15 COMMANDER HOGAN: We have not taken
16 any one particular one, in effect, we have looked
17 at several. Air stripping was one. Aqueous
18 stripping is another, aqueous filtering is another
19 alternative and certainly continuing on with
20 having it taken care of at the Waste Water
21 Treatment Facility, at Pig's Eye, is another way
22 also.

23 UNKNOWN SPEAKER: I guess the only
24 concern I have is the effluent you're talking
25 at the plant. Are you talking of just the

1 receiving stream requirements or drinking water
2 standards?

3 COMMANDER HOGAN: I think the ultimate
4 goal that you would like to see is that which
5 comes out of the ground after it's treated
6 for drinking. It's the drinking water standards,
7 the end goal.

8 Again, if that's the case, then I
9 have done my particular job and there is no
10 concern whatsoever to your particular health or
11 anyone else's on that particular site.

12 I would also like to so indicate
13 that one of the other goals in the activity was
14 to make sure that the TCE that we suspect to be
15 in the ground and it was caused by the operation
16 of the facility there is taking care of such that
17 it doesn't impact any future generations along
18 the way if we contain that particular process.
19 If there are other contributors, we'll certainly
20 look at that at the same time. Those drinking
21 water standards is what we would ultimately
22 like to achieve.

23 Additionally, on the site, as is
24 so indicated up there, because there was a
25 contaminant in those barrels that had been leaking,

1 part of the ongoing process that we will continue
2 to investigate is the impact on the soil itself.
3 As I had indicated to you earlier, we had removed
4 1200 cubic yards of soil, have cleaned it and
5 disposed of it appropriately. Have we identified
6 it all? As part of our sampling and drilling
7 activities, we will, in fact, look at the con-
8 taminants that may be contained in the soil pores
9 that we take out of the ground. And if that
10 so indicates that we need to take other action,
11 we will certainly look at that.

12 That will be handled as an additional
13 investigation parallel with this remediation
14 activity and will be the subject of future plans
15 and future presentations for the public to comment
16 upon at that particular point in time.

17 As I so indicated, we are approaching
18 a decision point. The public comment period
19 is available and certainly open and through the
20 30th of May. Following this particular comment
21 period which we would very much like your opinions
22 and comments on the plans themselves, we would
23 submit a draft through the regulatory agencies
24 and with the Navy would be co-signers of that
25 once approved and then we would proceed with that

1 particular plan itself.

2 In executing that particular plan,
3 we would, as I so indicated, would be sinking
4 wells, which would not present any kind of
5 particular eye sore activity to the community and
6 that which we would apply would be a matter of
7 public record in the documents that we're talking
8 about here. So, I think we're trying at this
9 particular stage to be as open and honest and
10 straight forward as possible to remove the potential
11 of a public health problem for not only a local
12 area, but for future generations should they
13 decide that they need to use a local area that
14 currently is not being used.

15 Our plan itself is one sort of for
16 common use and we are not impacting it now and as
17 I so indicated, we are not contributing to a
18 problem for the City of Minneapolis at this
19 particular point in time.

20 I would invite your comments con-
21 cerning that which I presented this evening.

22 Yes, sir?

23 UNKNOWN SPEAKER: It's my under-
24 standing that FMC uses a large quantity of water
25 from the City of Fridley at the present time

1 for cooling purposes, is that correct?

2 COMMANDER HOGAN: Yes, sir. They
3 have a certain portion of that, yes.

4 UNKNOWN SPEAKER: Why not take this
5 water being that their purpose for using this
6 water now is not for human consumption, why not
7 take the water that you're going to process, run
8 it through their cooling system and put some use
9 to it, which may also help as it's tumbling
10 through the cooling towers, help wash out some
11 of the contaminant? Just a thought. Why waste
12 the water? Why treat it and then put it directly
13 back into the river without using it, because
14 the City of Fridley now has got a program and the
15 Council people are here, that we're expanding
16 our water system and one of the reasons we have
17 to build a new storage facility, and I don't
18 know if we're putting down any new wells, is
19 because of large industrial users like FMC.

20 COMMANDER HOGAN: Your comment is
21 well taken and certainly from the taxpayer's
22 point of view, I will look at that. I think that
23 that will be one of future consideration and it
24 is well needed.

25 UNKNOWN SPEAKER: The other thing

1 is, my other question is, how far do you think
2 the contaminant is down and how deep is Well No.
3 13? Do you have any idea?

4 COMMANDER HOGAN: I personally do not
5 know the depth of Well No. 13.

6 Yes, Ma'am?

7 MS. JORGENSEN: Councilwoman
8 Nancy Jorgenson, City of Fridley.

9 Well No. 13 is approximately about
10 450 feet and we have pumps showing no TCE's.
11 Mark Winston in front of you is also with our
12 Engineering Department.

13 I have some serious concerns, though,
14 about the amount of water that you're going to
15 be pumping on a daily basis. From rough calculations,
16 you're going to be pumping about 936,000 gallons
17 a day.

18 COMMANDER HOGAN: Yes, Ma'am.

19 MS. JORGENSEN: Currently, the City
20 of Fridley runs about four million gallons a day
21 during the winter months. During the summer,
22 we'll go anywhere from 13 to 16 million. Now,
23 as FMC is quite aware, we are looking at a
24 proposed rate structure for increasing cost to
25 our water supply. I believe Arnold Wickhoff (sp)

1 has spoken to our City Manager. We've also had
2 to implement a water conservation dam here in
3 the city of Fridley. In the last three years
4 with the drought, the Prairie du Chien aquifers
5 have dropped 40 feet. We've had to implement
6 changes to our well systems to drop our pump heads
7 down so that we can adequately address our water
8 here for the city of Fridley.

9 The City of Minneapolis currently
10 takes all of their water from the Mississippi
11 River. None of it comes from wells. But yet,
12 you're going to sink five wells, you're going to
13 be drawing out 936,000 gallons of water per day
14 over a 30-year period, how long do you anticipate
15 before the Prairie du Chien aquifer is gone?

16 COMMANDER HOGAN: Well, the Prairie
17 du Chien is beneath us in this particular element,
18 as I indicated with the sandstone cap there.
19 The potential of impacting that of taking water
20 out from above it, which would feed it, that,
21 certainly, at some particular locations has to be
22 considered.

23 The point you're making, I think, is
24 well taken. And we'll certainly have to expand
25 our elements to take that into account.

1 MS. JORGENSON: Now, the considerations
2 that I've read in your letter here and just
3 through quickly passing through here is your
4 impact to the City of Minneapolis, but all of
5 the suburban communities that are to the north
6 of you, to the east of you, use that aquifer
7 for their city water supply.

8 COMMANDER HOGAN: Yes, Ma'am.

9 MS. JORGENSON: And you really need
10 to take that into consideration, and I do agree
11 with Mr. Harris, and as far as the water that is
12 going to be taken off. I can't see putting that
13 water back into the Mississippi River. That is
14 only going to benefit the City of Minneapolis. That
15 water needs to go back into the aquifer.

16 COMMANDER HOGAN: I think the point
17 you're bringing up, we'll take into account and
18 look for other alternative uses for that. We
19 certainly are familiar with the conditions that
20 exist in other locations north of here. I do
21 believe you have hit upon something that we really
22 need to take a little closer look at.

23 Yes, sir?

24 UNKNOWN SPEAKER: Well, two points.
25 My recollection and according to my calculations,

1 the usage that I have, I mean, just my own personal
2 uses in the house is 18,250 gallons per year of
3 water. Now, if you multiply that number by the
4 number of residents using the area aquifer and
5 the fact that 936,000 gallons per day of water
6 that you're drawing out goes away from the Fridley
7 system, because you said the spilling of the
8 Prairie du Chien aquifer goes to the southwest
9 of Fridley, so once you pull it out, it doesn't
10 benefit Fridley to put it back in because it
11 keeps going southwest, right?

12 COMMANDER HOGAN: Yes, sir.

13 UNKNOWN SPEAKER: Okay. So, what
14 we're concerned about, basically, is the little
15 amount of water that you're drawing out of the
16 system to use in the plant. Anything you draw
17 out of there in that area goes southwest, so we
18 don't in Fridley or any other suburbs going
19 north or northeast get any benefit out of that.
20 So, what I'm concerned about, basically, is the
21 usage of 18,250 square feet per day, per person
22 in this area and what happens to the aquifer?
23 After it goes past the Mississippi River, who is
24 going to use it there? So, let's not waste
25 water anywhere, in particular, because that may

1 be the aquifer that we need should the Mississippi
2 River get relatively low.

3 COMMANDER HOGAN: Sir, I understand
4 that. For a point of reference, let's do a
5 couple of things. I think then that really does
6 force us back and we will certainly take into
7 account both of your comments.

8 The normal flow of water, as I so
9 indicated, is in this direction here (indicating).
10 If I am a contributor to a contamination element
11 at this particular location and the newer wells
12 are elsewhere to the upstream side, I'm not
13 impacting you with my contaminant at this
14 particular point. Others, yes, potentially, yes.
15 Certainly in the near vicinity if I was to be
16 the user here (indicating).

17 But, as you have so indicated and I
18 think very appropriately, since I draw downstream,
19 I am another draw on the total water quantity
20 that's in there. I will certainly have to balance
21 all those particular considerations in that
22 draw itself.

23 There may be another way to look at
24 that. You, obviously, have the whole series of
25 public forums, permit activities, a lot of people

1 will have an opportunity to look at the particular
2 actions. That's why we're bringing this forward
3 right now for consideration.

4 When I ask you for a concern that you
5 have for water, this is one of those cyclic
6 concerns on a 10/20-year element. I do know,
7 however, that there's a drought condition in your
8 area, your local area and it has been for some
9 time.

10 MS. JORGENSEN: Well, the problem
11 that we're finding is more and more communities
12 are tapping into that particular aquifer. That
13 is the only one right now that I understand from
14 the Environmental Protection Agency that we
15 can draw into.

16 We have looked at going into the Mount
17 Simon-Hinckley aquifer to try to draw in, because
18 we are experiencing TCE problems in Fridley as
19 well, not in the well area that we're talking
20 about. We're looking at the Common Fields just
21 directly across from you.

22 But with the current draw down
23 into that aquifer and more and more communities
24 going into it, and unrestricted usage in some
25 communities, it's going to continue to deplete.

1 MR. CRAMER: I'm Adam Cramer,
2 Superintendent of the Water Plant Operations
3 for Minneapolis. I'm an engineer and I've been
4 involved in a lot of different things and, obviously,
5 I'm under a lot of fire right now, having an
6 ultimate source, which was on Channel 2 last
7 night, but nonetheless, the situation, what
8 you're talking about is the Prairie du Chien,
9 which is a confined layer. And we're talking
10 about taking water or they're talking of taking
11 water out of the glacial till. The two are
12 really not interconnected at all in points along
13 the way. The Prairie du Chien is being fed
14 from other directions. The reason you can't tap
15 the Mount Simon-Hinckley is the DNR is trying to
16 keep that as a source of water or reserve for
17 the future, plus the recharge is extremely slow
18 down in Mount Simon-Hinckley. So, they're
19 trying to concentrate their efforts on the
20 Prairie du Chien/Jordon.

21 Your draw-downs are more as a result
22 of all the suburbs drawing and the high demand
23 for water more so than what's happening with the
24 glacial till, because in most cases, the glacial
25 till is pretty well depleted and not doing much

1 in the way of recharge.

2 And we really have to look at wetlands
3 for recharge of ground water. That's a bigger
4 problem in the long run than worrying about the
5 glacial till.

6 As far as what FMC or the Naval
7 Ordinance is talking of taking out of the site,
8 that avenue is a natural source of feed to the
9 Mississippi River and that's a channel we don't
10 want to stop because we need the recharge when
11 we don't have the rains that flow from up north.
12 So, we need the natural charge to the Mississippi
13 river.

14 I'm not overly excited about dumping
15 anything that doesn't go way below drinking
16 water standards, because anything that goes in
17 and everything that's happening upstream to me is
18 adding small amounts and they're cumulative to the
19 point where I have to go to bat for their ration
20 of DAC to massive expenses for the City of
21 Minneapolis.

22 So, I don't want that to happen, yet
23 the water really has to go back in for supplementing
24 the river, taken at higher quantities and
25 putting it in faster than what normally would go

1 there due to the natural recharge, but it really
2 ultimately has to end up in the river.

3 COMMANDER HOGAN: Let me make one
4 thing clear, that this is the Navy's responsibility.
5 It just happens to be on the same site co-located
6 with FMC. This is a Navy particular problem.

7 UNKNOWN SPEAKER: Well, FMC has
8 a pump-up program, too.

9 COMMANDER HOGAN: Yes, sir. They do.
10 Theirs is separately from the one we're talking
11 about tonight, but they certainly are involved in
12 a similar process on their own.

13 MS. JORGENSON: Have you had
14 discussions with the Twin City Army Amunition
15 Plant and what they're doing with the water that
16 they're currently pumping?

17 COMMANDER HOGAN: Yes, Ma'am. But
18 not officially as they would even be linked
19 along the way. I'm familiar with what they're
20 having to do and with the process they are going
21 through.

22 Gentlemen, how many of you are
23 familiar with that?

24 UNKNOWN SPEAKER: They've looked
25 at several opportunities. I don't think they've

1 come up with a final, but during the summer months,
2 they want to use it for their water supply.
3 They're looking at alternatives to dump it either
4 to St. Paul or Minneapolis, but the times they
5 want to give it to us, we don't need it. We can't
6 really handle it. But there is a concern that
7 they're trying to find a useful purpose.

8 COMMANDER HOGAN: I believe they
9 take something which appears to be a derivative
10 of G and H here, which is a treatment. One of
11 the alternatives we'll discuss was a treatment, and
12 then further use because of the depleted conditions
13 up there, and I believe there was also a dis-
14 cussion of, is there another place you can put a
15 well field that would not be in that vicinity?

16 I would not want to go on record
17 of speaking for them, because I can't, of the process.

18 It appears that I have to do two
19 things: Balance Minneapolis' requirement,
20 and most certainly the impacts and consideration
21 on Fridley, as well as others. It certainly will
22 be a balancing act in all cases.

23 At the same time, looking at the
24 particular contaminant that we're talking about in
25 terms of TCE's and its impact.

1 Certainly, this particular action
2 that was listed first, the "no" action, is not
3 a superfluous one that can be thrown up and not
4 looked at because the potential exists for not
5 damaging your water and you're currently living
6 with a no-action case right now, for all intents
7 and purposes. You don't have a problem and
8 and I'm not impacting you.

9 UNKNOWN SPEAKER: Not right now.

10 COMMANDER HOGAN: Not right now.

11 The concern is, I'm aware that some-
12 thing is there in the ground that is migrating.
13 Have you seen it? Will you ever see it? No.
14 If I do something, I potentially will impact
15 you and the City. Would I consider that?
16 As well as, consider the cost associated with
17 all of the rest of it, too.

18 Those are all concerns. Those are
19 all the things that were part of this particular
20 evaluation process.

21 I would hope that your comments might
22 continue to be forthcoming, because all of this
23 is going to be a help to us in the process itself.
24 And I don't know that I want to contribute to
25 or create a bigger problem than one that may not

1 even exist today or one that could be contained.
2 That's not the intent at all.

3 MS. JORGENSEN: Is FMC available for
4 Superfund money in helping to clean up the TCE
5 problem?

6 COMMANDER HOGAN: FMC is currently
7 ongoing a cleanup activity both for soils and
8 water on their portion of the south site. As I
9 certainly know, you are aware, sir, in this
10 area to the south, they have a series of wells
11 and they have a capped or open soils containment
12 area there. They are already in the process.

13 FMC was placed on the National Priorities
14 List, I believe in '83, and they have a cleanup
15 activity that's ongoing. It's in a monitor
16 stage right now. And basically, any given
17 Thursday, I think you can go and look at the guys
18 taking water samples out there. It's something
19 that's part of the process. That's expected to
20 continue for some time.

21 The Navy would be looking at doing
22 the same thing on its own property or similar
23 activities. We would have to balance both of
24 those in any considerations.

25 UNKNOWN SPEAKER: Just to address

1 the no action. It's not a reasonable alternative.
2 You have extremely high concentrations of TCE
3 extremely close to the Mississippi River.

4 UNKNOWN SPEAKER: What are we talking
5 about, high concentration? I mean, you know, we
6 keep on alluding to it, but nobody has said,
7 you know, this is dangerous, this is not dangerous,
8 it's so many parts per million, so many parts
9 per billion. I mean, how much, what are we
10 really talking about? Are we talking about a
11 fly speck in the ocean or are we really talking
12 about --

13 COMMANDER HOGAN: Eric, do you want
14 to attempt to address that one?

15 MR. GREDELL: Yes. I can.

16 The concentrations have been monitored
17 through this monitoring well network that the
18 Commander mentioned. There's approximately
19 50 wells on the site and off the site. The con-
20 centrations are variable because that covers a
21 rather large, you know, just lateral area, going
22 from up to the north of the plant; actually
23 property that doesn't even belong to the Navy,
24 far to the south, really in what is the heart of
25 that plume that you're looking at there and even

1 farther. As we get farther south, we have, you
2 know, the FMC site, which it sounds like people
3 are generally familiar with, and they are doing
4 additional monitoring down there.

5 On the Navy's well network, we're
6 seeing concentrations in that parkland, which is
7 really where the plume tends to channel together
8 and discharge to the river, just about in that
9 location the arrow shows.

10 Over the thickness of that sand and
11 gravel aquifer that you saw in that cross section,
12 the TCE is pretty much spread throughout the entire
13 thickness. It will vary in that range from eight
14 or nine parts per million up to, I think, the
15 highest level was about 12.5, 12.7 parts per
16 million. You're not familiar with that --

17 UNKNOWN SPEAKER: Per million or
18 billion?

19 MR. GREDELL: Million, yes, milligrams
20 per liter is another concentration, an expression
21 meaning parts per million.

22 COMMANDER HOGAN: You're talking
23 high relative to drinking water standards.

24 MR. GREDELL: That would be called
25 relatively high concentrations, as the other

1 gentleman mentioned. Because, when we talk
2 about cleanup levels, we are talking in, you
3 know, terms of parts per billion we want to get
4 down to in the aquifer itself.

5 UNKNOWN SPEAKER: Just one further
6 comment. Is this only the Navy's or is this
7 a cumulative thing between FMC and the Navy?
8 Or, can't we determine that? Do these numbers
9 include FMC's?

10 MR. GREDELL: From the hydrogeologic
11 studies that have been done, we've not only
12 looked at concentrations, but we've also studied
13 the ground water flow properties, you know, how
14 is the ground water moving. We would not expect
15 that there was any impact from the contamination
16 on what's known as the FMC site that we're
17 picking up in the monitoring well network that the
18 Navy has used for their investigation. But, we
19 don't see any potential overlap of those influences.
20 I think they're fairly distinct. The FMC site
21 is far enough south from the Navy Plant Building
22 there and the ground water does tend to flow, you
23 know, from the northeast downward there. You
24 know, you don't see any effect and there's really
25 no effect that we can determine where the Navy

1 site would actually be, you know, contributing
2 some contamination to what they're seeing on the
3 FMC site. They're really fairly distinct sites
4 there.

5 UNKNOWN SPEAKER: Well, just for
6 reference, the drinking water standard currently
7 is 50 parts per billion for all organics
8 and they talk of being lowered to 25, you know,
9 parts per billion. So, they're talking of lowering
10 it even lower. So, obviously, that's a concern
11 to us which standard, because I believe the
12 receiving water standards are much higher than the
13 drinking water standards.

14 UNKNOWN SPEAKER: What are you picking
15 up on the tape readings?

16 UNKNOWN SPEAKER: We don't have a
17 problem with the intakes right now. It's trades.
18 But, it goes through treatment. What happens
19 is with the chlorination process, you can convert
20 the Trichloroethylene -- (inaudible).

21 COMMANDER HOGAN: I think we've got
22 a couple of things that may be coming up here.
23 As I had so indicated before, have we seen the
24 extent of the migration of these particular elements,
25 because certainly in the process of monitoring

1 the activity on the site for some time, we have
2 seen the concentrations move from the northeast
3 corner toward the southwest corner. So, we
4 have been able to see a migratory pattern in the
5 sampling that has been done. All right. That
6 would indicate that we have identified the actual
7 direction of motion and have some probability
8 of estimating the amount of flow in that.

9 I do know that we have been monitoring
10 with your activity and FMC in the process the
11 impact at the water inlet to the city and have
12 not seen any there.

13 Have we seen the peak of the flow,
14 are we measuring the back side of that?
15 Or, are we seeing the peak of the flow of this
16 contaminant as it moves through? Have you seen
17 that yet?

18 Again, that's a question that certainly
19 I, as an individual, and certainly you may have
20 right in your own mind.

21 If we are past the peak, then certainly
22 we may not consider this as one area of concern.
23 If it is a peak, we haven't been able to see a
24 buildup to it yet. It's the back side when one
25 could consider us past a particular concern and

1 consider us lucky. Either that or we just didn't
2 have the monitoring facility at the time. The
3 natural processes have taken care of us.

4 That's one of the attempts of the
5 further investigations to find out. That's a
6 very difficult question to answer, but it certainly
7 would help in trying to answer your questions,
8 because I don't need to deplete something if we
9 don't have a problem.

10 UNKNOWN SPEAKER: But I guess
11 just leaving it really makes it unuseable
12 for anybody, because anytime you get any drawdown
13 in the area, you're going to draw into that and
14 it is part of the study that we are doing with
15 the U. S. Geologic Service.

16 There's a process they have to go
17 through so the results are preliminary, so I'm
18 not supposed to give any of them.

19 But, in effect, what happens is if
20 we do any pumping in small amounts, we pull that
21 down into the Jordan.

22 COMMANDER HOGAN: One of the things
23 that I know that we need to do is to take an
24 appropriate action and then to monitor ourselves
25 as we go through it.

1 We need to move on, consider the
2 contaminants themselves and what to do about that,
3 because we know that those have the potential
4 for causing concern to people. We can't deny
5 that one.

6 I'd like to begin the process with
7 certainly the community's approval and proceed
8 along. As the plan develops, and we start
9 taking water out of the ground and monitor that,
10 that in turn those concentrations will be looked
11 at very closely. But if we have, in fact, passed
12 a peak and we do not have a problem there and we
13 are not creating one for you, that would be an
14 opportunity, provided it met all the other
15 regulatory requirements for activities to close
16 down or shut down an activity and then put it
17 into a monitor state, that would be a very business-
18 like, common sense approach to things.

19 I think that you've got to put all
20 these things together. The flexibility of a
21 particular plan being permitted is do something
22 about that which you know about and then continue
23 to watch yourself as you proceed along and don't
24 continue to do something you don't have to do,
25 but at the same time, don't shut off something

1 that you should continue to do, but continue to
2 monitor.

3 That, I guess you could call, a
4 flexible approach to things, but it is also a
5 common sense approach that tries to take into
6 account everyone's concerns.

7 I do know that the regulatory agencies
8 and the Navy themselves are working to build
9 a plan that meets as many people's requirements
10 as possible. Yet, like anything else, there's
11 a negotiated element as to whose will be met at
12 any one given time. But the give and take is
13 certainly one that has to include the impacts
14 upon you and that's what I'm looking for now.

15 May I invite you all to take a break,
16 if you would like, or we can continue the
17 discussions. I'll tell you what, if you would
18 like to continue them, let's take a break until
19 8:00 o'clock and we'll come back in for those
20 of you that would like and we'll continue then.
21 If not, then I thank you all for coming.

22 (At this time, a short break was
23 taken.)

24 COMMANDER HOGAN: We'll open the floor
25 up to additional questions.

1 Having had an opportunity, I think, to
2 look at and present the material this evening and
3 had a chance to look at it and ask certainly a
4 few questions, I would like to open it back up
5 and ask if there are any additional comments
6 and/or questions that you might have if there
7 is anything that is unclear about the general
8 approach that we are proposing to take and the
9 general time frame. We're talking about,
10 essentially, the calendar year to begin this
11 particular process and it would continue for, obviously,
12 from there on out in terms of time.

13 We're talking about a flexible plan,
14 one that continues and takes action and monitors
15 its action and then continues to have decision
16 points in and after that.

17 The decision points are built into
18 the particular program; we want to look at
19 regulatory activities from a common sense approach
20 to it, and, obviously, taking the concerns of
21 all the other parties that we might be impacting.

22 As I indicated early on in the
23 presentation itself when we talked about the things
24 that we were considering, technical was one of
25 those, can it be done? We've got a lot of ways

1 to do it.

2 The impacts resulting from the
3 implementation, that's what you are talking about,
4 is certainly a concern.

5 Compliance. We can bring in your
6 impacts and concerns if we implement in line with
7 the compliance requirements and I think we can
8 build an equitable package across the board. And
9 ultimately, is this risk reduction what we were
10 referring to.

11 I think the Navy at this particular
12 point in time is willing and is desirous of taking
13 that which most corrects the problem. The costs
14 may be a consideration, but certainly are not
15 the driving element, by any means, in looking at
16 cleaning up something that exists on its particular
17 property, that impacts its particular neighbors.
18 It is concerned about its neighbors and all that
19 that goes upstream and downstream. It intends
20 to keep them as neighbors for many years to come.

21 ADAM CRAMER: The next question is
22 Adam Cramer, citizen, not the City of Minneapolis.

23 COMMANDER HOGAN: Okay.

24 ADAM CRAMER: What about, has there
25 been any consideration when you're pumping it into

1 the sewer system of leakage into the sewer system?

2 COMMANDER HOGAN: That has been
3 discussed on numerous Technical Review Committee
4 events and meetings.

5 Mark, do you want to take a stab at
6 any comments on that from your side of things as
7 you might see it, from a pollution control side,
8 or any knowledge thereof that you have of similar
9 conditions, such as leaks in sewer systems? I'm
10 going to defer that over to Mark.

11 MR. LAHTINEN: I would need to talk
12 to somebody from the MWCC or perhaps, Doug, do
13 you know in the FMC's dealings?

14 UNKNOWN SPEAKER: No. We haven't
15 done any checking of the sewer systems.

16 COMMANDER HOGAN: Let's presume then,
17 since we don't have an expert here, that we
18 don't have an answer tonight, but we'll certainly
19 investigate it. One would, however, suspect
20 that they are not absolutely full tight.

21 Yes, sir?

22 UNKNOWN SPEAKER: The figure of, what
23 was it, 900,000 gallons a day, yeah, about 900,000
24 gallons a day into the sewage system, what would
25 that do to the Pig's Eye capacity?

1 COMMANDER HOGAN: Well, that has been
2 investigated and it would not pose any particular
3 concern, overt concern on their particular part
4 as it's been indicated today. The MWCC has been
5 involved with us in the TRC process and their
6 representative is not here this evening. I do not
7 know what effect that will have on the capacity.
8 But, they have never raised an objection. There are
9 concerns, as has been so indicated, in terms of what
10 levels of contaminants are you entering into my
11 system?

12 I think they have other people that
13 discharge far more than that into the system.

14 UNKNOWN SPEAKER: I hate to keep on
15 bringing up money.

16 COMMANDER HOGAN: Yes, sir.

17 UNKNOWN SPEAKER: Okay. If we dump
18 it into the sewer system and they don't have a
19 capacity problem, who pays for the treatment?
20 The Metropolitan Sewer District? You know, that's
21 a considerable amount of waste to be treated.

22 MR. LAHTINEN: The Navy would be
23 paying the MWCC to use the sewer system, so they
24 would be paying it, essentially.

25 UNKNOWN SPEAKER: It depends on what

1 pocket you take that out of.

2 COMMANDER HOGAN: Let's put it point
3 blank, it's going to come out of the taxpayer's
4 pocket, either the State Taxpayer or the Federal
5 Taxpayer, which is one and the same you, ultimately.
6 That concern is certainly going to come to
7 us before the process

8 I would ultimately pay for that
9 particular activity after a given point in time.

10 UNKNOWN SPEAKER: I hate to keep on
11 beating the same drum, but, you know, an alternative
12 use besides putting it into the sewage system, it
13 seems like it may be an advantage to everyone.

14 COMMANDER HOGAN: I think we'll have
15 to take another look at that

16 UNKNOWN SPEAKER: Are you looking at
17 putting untreated water into the sewer system,
18 sanitary sewer system, down at Pig's Eye? Is
19 that what I'm hearing?

20 COMMANDER HOGAN: What we would do
21 is extract it from the ground, monitor it, as
22 necessary, would add that or dilute it, to meet
23 the particular standards for entering. We'd
24 have to meet the discharge permit requirements.
25 That has been part of the ongoing particular process.

1 If we met those particular things, then we could
2 use it. If not, then, in essence, we are forced
3 to do some kind of pretreatment or premixing to
4 meet those particular standards. They are
5 far higher, however, than the numbers we are
6 talking about.

7 UNKNOWN SPEAKER: The Pig's Eye
8 Treatment Facility that we have, though, is a
9 secondary treatment facility. It does not remove
10 the chemicals. If they would go into a tertiary
11 system, then they would be dealing with the
12 chemicals themselves. All they'll do is turn
13 that around and redilute it and put it right back
14 into the river.

15 COMMANDER HOGAN: That also needs
16 to be something for further consideration.

17 Again, the representatives of the
18 Waste Water Commission have been involved with
19 us along the way. These objections, I do not
20 believe, have been raised by them at this particular
21 point in time.

22 UNKNOWN SPEAKER: Sir, they have
23 limits under the MPES permitting process also, so
24 when the water leaves the Waste Water Treatment
25 Facility, they have to make sure that it's at a

1 certain level and all this would be taken care
2 of ahead of time in the Waste water metropolitan,
3 now I'm speaking for Minnesota, but we would have
4 that all taken care of ahead of time with the
5 Metropolitan Waste Water Commission and the
6 Department of the Navy and that would all be, all
7 those concerns would be addressed before they
8 would be allowed to discharge this 96-inch main.

9 MR. LAHTINEN: Also, I think the
10 discharge to this sanitary sewer is going to be
11 two to three years. After that point in time,
12 there will be some type of treatment on site and
13 the discharge would go elsewhere.

14 UNKNOWN SPEAKER: The concern that I
15 have is if it is just a secondary treatment
16 facility and they're just going to be diluting it,
17 is basically what's going to happen. Their
18 primary treatment facility removes large objects,
19 secondary, all it does primarily is just aerate
20 it to break down any fecal material in the water,
21 basically. So, you know, you're still going to
22 be passing it through.

23 MR. LAHTINEN: There will be some
24 volatile --

25 UNKNOWN SPEAKER: In the aeration.

1 MR. GREDELL: There would be a
2 combined effect there in its dilution, its
3 volatization, but it is also biodegradation.
4 Those organic compounds are biodegradable. And
5 if you would even see any of those, you know,
6 concentrations after the dilution in the sand
7 through an interceptor and then within the
8 treatment facility itself, which has much larger,
9 well, tankage, much more volume there, those
10 different mechanisms would all be going on to,
11 you know, reduce the concentrations.

12 It isn't just dilution. There are
13 some other physical effects going on, too, to those
14 compounds. The same treatment process, the
15 biological process that works on human waste
16 matter would also be working on these organic
17 compounds.

18 UNKNOWN SPEAKER: Okay. What happens
19 after you put the water through the aeration
20 process and you have the chemicals going up in
21 the air, where do they go from there?

22 MR. GREDELL: If there are volatile
23 organics released, and I don't really know what
24 the concentrations in total are received at that
25 treatment facility, I do know that the contribution

1 from the ground water that the Navy is talking
2 about discharging would be extremely small on a
3 percent of their total flow basis. Those volatile
4 organics, in anything that will volatize would
5 emit into the air near the treatment facility,
6 and, you know, whether that is monitored, I really
7 don't know. I mean, for permit purposes or any
8 other purposes, I really don't know.

9 But, you know, that is something that,
10 you know, that people are responsible for the
11 treatment facility should be aware of and if it's
12 a cause for concern, that is something they,
13 through the State, through their oversight, should
14 be watching.

15 COMMANDER HOGAN: John, did you have
16 a comment?

17 MR. JAPP: It was basically covered by
18 what's been said.

19 COMMANDER HOGAN: You had a comment
20 in the back?

21 UNKNOWN SPEAKER: I formerly worked
22 for the Metropolitan Waste Control Commission, and
23 I don't know if I can speak on their behalf, but
24 I think their comments in terms of volatization
25 at the plant is true and biodegradation of solvents

1 and some dilution.

2 In addition to that, I was wondering,
3 Mark, you commented and said the maximum period
4 of discharge to the sewer system would be about
5 two or three years?

6 MR. LAHTINEN: Yes.

7 UNKNOWN SPEAKER: The reason I think
8 that's relevant is because the Waste Control
9 Commission does have a reserve capacity charge,
10 that if you would see three years, you pay a
11 very large fee. I did a quick calculation and
12 it's 1.9 million dollars for reserve capacity.

13 I guess the thrust here is that in
14 the next three years, you'll find an alternative
15 treatment to dispose of that. Does that sum
16 it up?

17 COMMANDER HOGAN: Pretty much, sir.

18 As was so indicated, let's take care
19 of our particular immediate problem, let's monitor
20 the activity along the way. Let's use common
21 sense issues about the whole particular approach
22 and not further contribute to anyone else's
23 problem.

24 MR. JAPP: I guess I could add to
25 that, that it is our intent to dump into the

1 sanitary sewer system as a temporary basis, but
2 as soon as practically possible, we're going to
3 undertake the design of a permanent treatment
4 facility. So, we're going to attempt to bring
5 that onstream as quickly as possible, and not just
6 wait two to three years and start it, but do it
7 as quickly as possible.

8 COMMANDER HOGAN: Might there be
9 any additional comments or questions?

10 If not, as I so indicated, the opportunity
11 to address those particular questions is certainly
12 available to you and we would like to have them
13 postmarked by the 30th of May, if you would so
14 indicate those in writing, or certainly reiterate
15 your comments this evening, which have been
16 recorded on your left.

17 The address that you see on this
18 particular slide is also indicated on this Fact
19 Sheet, which I know that some of you have picked
20 up, in the lower right-hand corner. If you have
21 any particular concerns or comments that you'd
22 like to express in writing, please address them
23 to Mr. Shafer at that particular address and we
24 will ensure that they are in the appropriate
25 summary section of the record and decision, and

1 we proceed on with those.

2 The period of comment will close
3 on the 30th of May. If you postmark it on that
4 particular day, you should see your comments
5 responded to appropriately.

6 If not, I thank you for your
7 attention this evening. Thank you very much
8 for taking your time to share it with us and
9 your comments are much appreciated, and I thank
10 you very much. I look forward to working with
11 you in the future.

12 Thank you.

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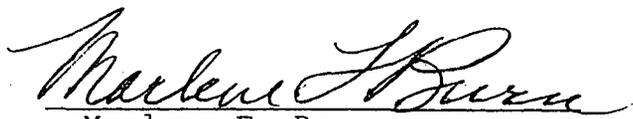
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REPORTER'S CERTIFICATE

I, MARLENE F. BURN, a general Shorthand Reporter, of Professional Court Reporters, 3743 IDS Center, Minneapolis, Minnesota 55402, do hereby certify the foregoing 74 pages of type-written material constitute a full, true and correct transcript of my original Shorthand notes, as they purport to contain, of the proceedings reported by me at the time and place hereinbefore mentioned.


-Marlene F. Burn-

Dated this 25th day of May, 1990.